



Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 100137 a/ubr	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/009893	International filing date (<i>day/month/year</i>) 05 September 2003 (05.09.2003)	Priority date (<i>day/month/year</i>) 27 September 2002 (27.09.2002)
International Patent Classification (IPC) or national classification and IPC C22C 38/00, 38/12, C21D 7/13		
Applicant CDP BHARAT FORGE GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 22 April 2004 (22.04.2004)	Date of completion of this report 18 November 2004 (18.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009893

I. Basis of the report

1. With regard to the elements of the international application:*

the international application as originally filed
 the description:

pages _____ 1-11 _____, as originally filed
 pages _____ _____, filed with the demand
 pages _____, filed with the letter of _____

the claims:

pages _____ 1-7 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the drawings:

pages _____ _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the sequence listing part of the description:

pages _____ _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/09893

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims	1 - 7 NO
Inventive step (IS)	Claims	YES
	Claims	1 - 7 NO
Industrial applicability (IA)	Claims	1 - 7 YES
	Claims	NO

2. Citations and explanations

1. Relevant documents:

D1: JP (A) 07157824.

A computer translation of document D1 (obtainable from the internet site of the Japanese Patent Office) is appended.

D1 discloses an AFP steel composition for producing forged parts with no heat treatment.

The following table (see next page) shows this composition in comparison with the alloy according to the application.

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Element	Application	D1	Ex. 4	Ex. 5	Ex. 6	Ex. 8	Ex. 9	Ex. 11
C	0.12- 0.45	0.15- 0.50	0.35	0.46	0.32	0.27	0.44	0.26
Si	0.10- 1.00	0.005- 2.00	0.242	0.751	0.907	0.605	0.824	0.42
Mn	0.50- 1.95	0.40- 2.00	1.31	0.55	0.81	1.22	0.43	1.02
S	0.005- 0.060	0.01- 0.10	0.039	0.087	0.044	0.063	0.040	0.034
Al	0.004- 0.050	0.0005- 0.050	0.0161	0.0232	0.0375	0.0284	0.0249	0.0259
Ti	0.004- 0.050	0.003- 0.050	0.022	0.015	0.026	0.017	0.007	0.023
V	0.10- 0.40	0.20- 0.70	0.41	0.24	0.29	0.44	0.21	0.26
N	0.015- 0.040	0.0020- 0.0200	0.0124	0.0181	0.0112	0.0147	0.0153	0.0105
Cr	0-0.60	0.02- 1.50	-	-	0.50	0.44	-	0.38
Ni	0-0.60	-	-	-	-	-	-	-
Co	0-0.60	-	-	-	-	-	-	-
W	0-0.60	-	-	-	-	-	-	-
B	0-0.01	-	-	-	-	-	-	-
Mo	0-0.60	0.02- 1.00	-	-	-	0.16	-	0.10
Cu	0-0.60	-	-	-	-	-	-	-
Nb	0-0.50	0.001- 0.20	-	-	-	-	0.028	0.073
Fe	Rest	Rest	Rest	Rest	Rest	Rest	Rest	Rest
Condition 1	0.0021- 0.0120	0.0015- 0.16*	0.0050	0.0043	0.0032	0.0065	0.0032	0.0027
Condition 2	0.035- 0.140	0.0268- 0.231*	0.113	0.192	0.158	0.16	0.177	0.296
Condition 3	1.00- 3.50	0.48- 2.4*	1.57	0.66	1.67	2.4	0.52	1.93

* The ranges for conditions 1 to 3 for D1 were calculated on the basis of ranges of the essential elements.

The values of the examples that fall outside the overlapping range are shown in bold font.

2. Novelty (PCT Article 33)

2.1 Comparison of the alloy according to the invention with the prior art (see table) shows that the claimed ranges of the steel composition overlap with the ranges cited in D1. No example lies within the range of the claimed composition. It is pointed out, however, that the disclosure of a document is not restricted to the examples therein and that it must be ascertained what teaching was made available to a person skilled in the art, taking into account the general knowledge of such an expert.

D1 includes examples (see the table) that are close to or within the overlapping range (see in particular examples 4 and 8).

The applicant is advised that the definition of the alloy in claim 1 merely represents a selection made on purely chemical grounds from the composition already known. No structural elements or properties of the alloy are mentioned. The mechanical properties achieved in the alloy according to D1 are comparable with those of the claimed alloy (see table 2), in particular the apparent yield point ≥ 540 MPa, the tensile strength ≥ 700 MPa and the impact energy ≥ 30 J.

It is therefore clear that, in the light of the information in D1, a person skilled in the art is able to apply the technical teaching within the overlapping range. In consequence, the subject matter of claim 1 lacks novelty.

D1 discloses steels that are forged. In consequence, the subject matter of claim 2 lacks novelty.

Since D1 suggests the automotive industry as a field of use, the subject matter of claims 6 and 7 also lacks novelty.

2.2 D1 discloses (see the abstract) a method for the production of a forged part, said method comprising the following steps:

- a) heating the material to a temperature in excess of the A3 point;
- b) shaping the material by forging;
- c) cooling.

The rate of cooling in step c) should be adjusted such that the steel displays a ferritic-pearlitic structure (see paragraph [32] and [33]). This teaching leads a person skilled in the art to the cooling rates according to the invention since, owing to the selected cooling rates, the invention results in the same ferritic-pearlitic structure. In consequence, the subject matter of claims 3-5 lacks novelty.